**1** Match each different microbe to its correct description and write the correct sentences.



Fungi



Viruses



Bacteria

are not made of cells and are very small.

can be small round cells or made of long threads.

are small cells with a cell wall but no nucleus.

**2** Link all the words in List A with the things they do in List B. Write them out in full sentences.

List B

* are used to make Quorn.
* grows on stale bread.
* makes bread rise.
* are used to make yoghurt.
* can be made from moulds.

List A

yeast

antibiotics

fungi

mould

bacteria

**CORE**

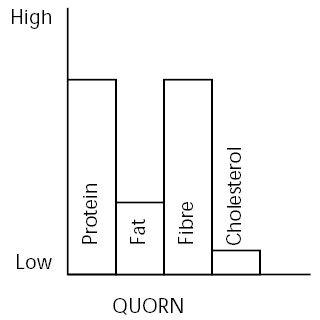
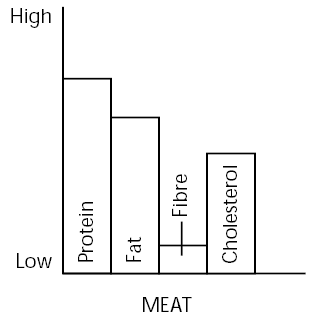
**3** A bacterium causes whooping cough in children.

**a** Explain why it is not possible to see this bacterium.

**b** Describe two other features of the bacterium.

**c** How does the bacterium reproduce?

**4** These bar charts show the contents of animal meat and Quorn.



**a** Explain why Quorn is often described as ‘a healthy alternative to meat’.

**b** When these new fungi-based proteins were developed, they were tested for at least ten years before they were sold. Explain why such a long time for testing was necessary.

**EXTENSION**

**5 a** Natalie counted the bacteria in some milk left in a warm place. The number of bacteria doubled every 30 minutes.

Copy and complete the results chart below.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Time (hours)** | 0 | 0.5 | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| **Number of bacteria** | 1 | 2 | 4 | 8 |  |  |  |  |  |  |  |

**b i** Draw a graph of Natalie’s results on graph paper. Label the horizontal (*x*) axis and vertical (*y*) axis.

**ii** Describe the relationship between the rate at which bacteria increase and time.

**iii** Each bacterium divides every 30 minutes. Explain why the graph is not a straight line.

**iv** Why would it be very hard to use this type of graph to estimate the number of bacteria in Natalie’s milk after 24 hours?